TOKYO DAWN LABS

Nova – Manual

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Thank you for choosing a Tokyo Dawn Labs product!

THE CONCEPT

NOVA is a parallel dynamic equalizer. Appearing in the familiar layout of a parametric equalizer, the plugin also includes a full featured dynamics section enabling NOVA to cover an impressively wide range of applications. Be it a master lacking density, the drum bus asking for more crispiness, or a sibilance problem in your perfect take: NOVA has an elegant answer.

A user friendly WYSIWYG drag and drop display paired with a classic “knob” interface gives quick and smooth access to the various parameters driving NOVA’s powerful signal processing. Elaborate equal loudness functions help finding the optimal setting without getting distracted by loudness differences.

NOVA includes a total of four dynamic EQ bands, input highpass and lowpass filters adjustable from 6dB/Oct to 24dB/Oct, and an exotic “W-Band”. All bands feature high grade filters and independent dynamics processors each being able to operate in linked, split, or various other configurations.

In practice, the processor covers a whole bucket of tasks:

- **Parametric equalization**
- **Dynamic equalization**
- **Frequency selective compression/expansion**
- **Multi-band compression**
- **Wideband compression**

Of course NOVA features all helpers and workflow enhancements you've come to expect in a TDR plugin: A preset manager, undo/redo, A/B, detailed documentation, copy & paste, and much more.

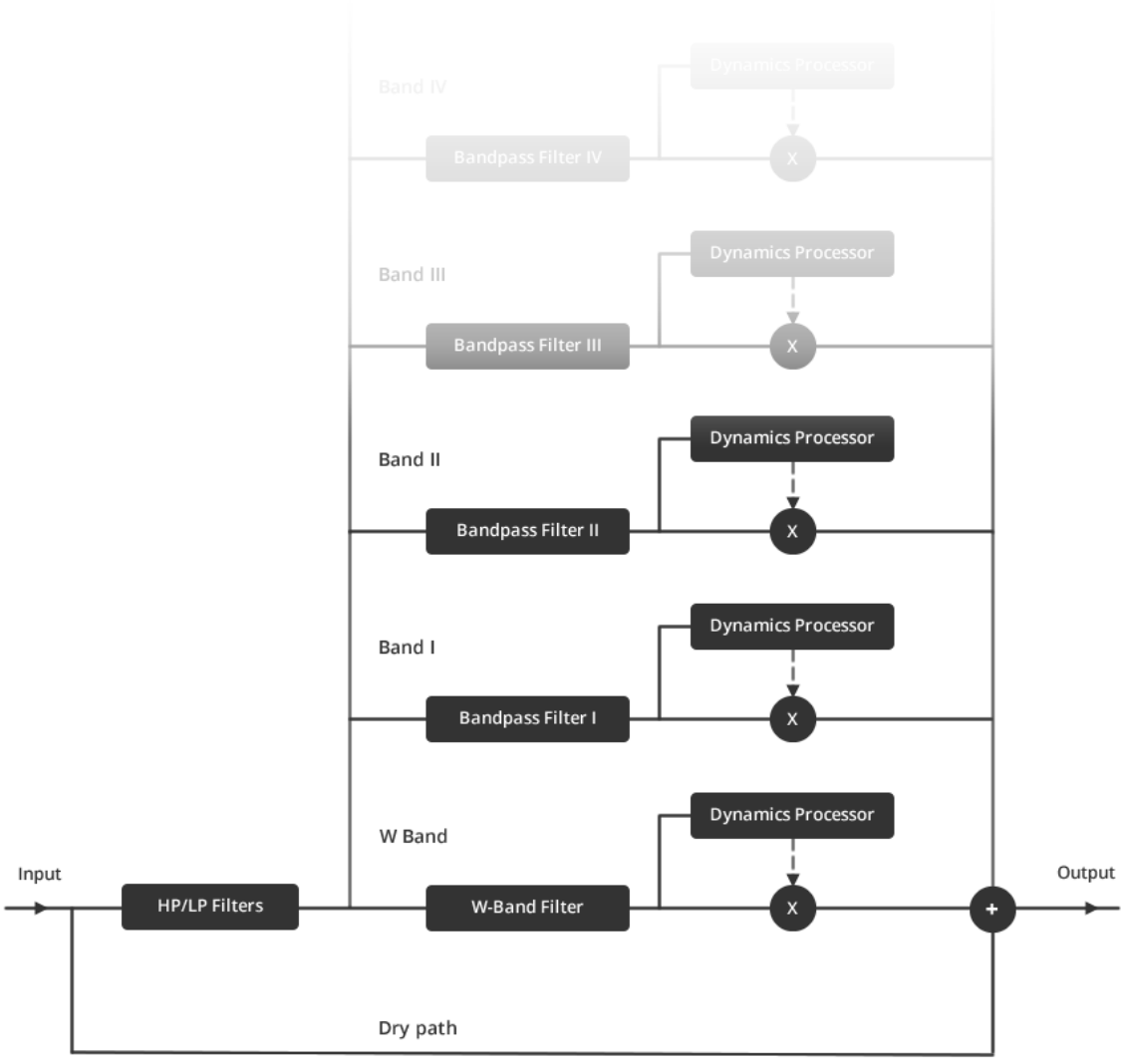
SIGNAL FLOW

With the exception of the input highpass and lowpass filters, NOVA's processing structure is fully parallel. A parallel structure provokes interesting band interactions and can severely reduce the amount of side-effects produced by nonlinear operations (such the dynamics processors running within the various bands).

An important detail of NOVA's concept is the W-Band ("wide-band"). It represents part of the signal that isn't covered by the bands. Simply speaking, the more active bands, and the wider they are, the "smaller" the W-band signal becomes. Accordingly, with all bands disabled the W-Band contains the original input signal. Changing the gain of this band allows deforming the frequency magnitude in an unusual manner.

As visible in the graph below, each band contains its own dynamics processor listening to its own band's input. However, this relation can be changed via the SPLIT and STICKY options explained in this manual.

NOVA constantly compares the input loudness with the output loudness to enable the equal loudness workflows accessible via EL TRIM or EL PASS.



HANDS ON NOVA

NOVA supports a wide range of functions; this chapter briefly addresses most of them and describes how they can be achieved quickly. The authors hope this chapter inspires the reader to dig deeper into NOVA's technical documentation!

Note: For even more detailed control over processing please consider the enhanced GE Edition, available here.

PARAMETRIC EQUALIZATION

Standard parametric equalization is NOVA's basic use-case. Its smooth sounding, yet precise filters can easily cover any equalization task. Each band ranges over an extremely wide **FREQUENCY** range from 10 Hz to 40 kHz (~12 octaves). All equalizer bands can be operated in hi-shelf/low-shelf or bell mode, with continuous control over **Q** and **GAIN**. This flexibility paired with the informative feedback from the main display make NOVA an exceptionally powerful equalizer.

In addition, any loudness change introduced by static equalization is compensated automatically.

Example for static equalization (the dynamics related controls are greyed-out because THRESHOLD is off):

DYNAMIC EQUALIZATION

NOVA's equalizer bands can dynamically adjust **GAIN** in dependence of a sidechain signal. From a different perspective, NOVA can compress and/or expand arbitrary areas in the spectrum. This is an excellent tool to correct a boxy low-end sound, even out resonances in a recording or reduce excessive sibilance in a vocal part. In addition, NOVA's expansive ratios are a great way to spice up a boring drum loop or an over-compressed stereo mix.

The preset "LF density" is a good example of dynamic equalization:

Hint: An external sidechain signal can also be fed into the plugin in order to drive the dynamics processors.

MULTI-BAND COMPRESSION

NOVA can be operated much like a regular multi-band-compressor. The following presets represent good starting point for multi-band dynamics processing:

- 2 Band Dyn
- 3 Band Dyn
- 4 Band Dyn

These presets have their FREQ and Q values preconfigured in such a manner that they fully cover the input bandwidth. This approximates the typical behavior expected from a crossover-based multi-band compressor.

This approach is particularly well suited for a broadcast style compression often required when a dialog or stereo mix should remain audible in noisy environments. NOVA's multiband capabilities can seriously increase the subjective loudness of a mix or make a lead vocal cut through a dense and busy mix.

Here's an example for a 4 band multi-band compressor (note the flat threshold curve):

Hint: The W-band path allows creating quite exotic multi-band scenarios. For example, one band could expand the mid-band, while the W-Band dynamics section gently compresses the remaining signal.

WIDEBAND COMPRESSION

NOVA can also operate as a wideband compressor, with detailed control over frequency dependent behavior. For instance, bands can be excluded from wideband compression leaving their natural dynamic range untouched; this would keep the low-frequency region uncompressed for maximum impact, or prevent both high and low frequencies from being compressed to form a dynamic “smile” curve.

Have a closer look at the preset “1 Band Dyn” for a demonstration of NOVA’s wideband compression capabilities:

Wideband compression used in conjunction with additional split band compression allows to achieve a high density while still preserving the musical balance between bands. As a result, this can be used for anything between subtle levelling and punchy, creative compression effects.

CHANNEL STRIP

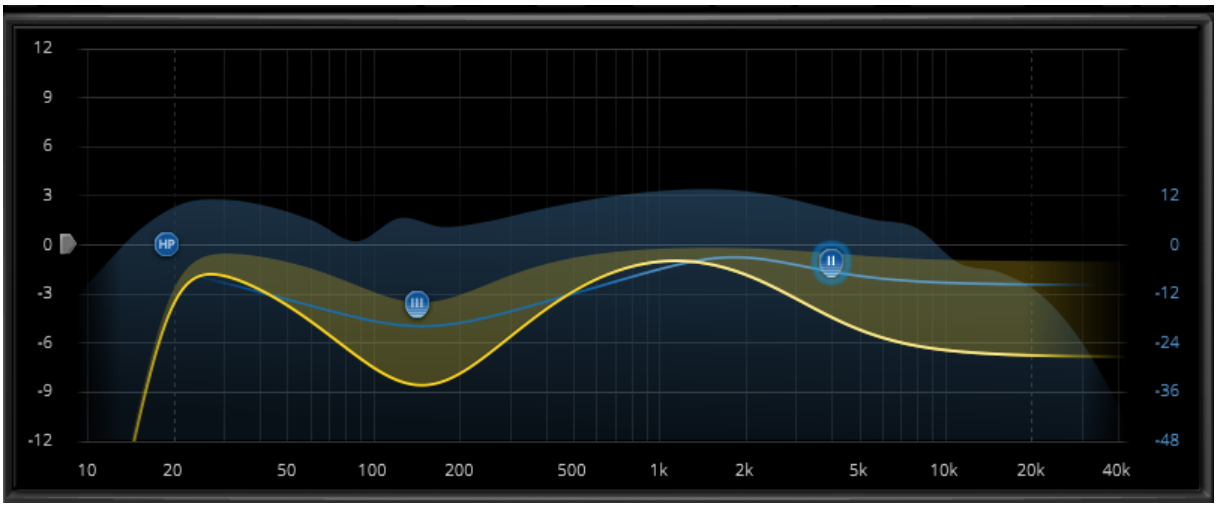
NOVA can also be used much like a conventional channel-strip: A compressor followed by an equalizer.

This is basically just a mixture of the scenarios “PARAMETRIC EQUALIZATION” and “WIDEBAND COMPRESSION” highlighted above. But it works surprisingly well in the mixing stage.

Here’s quite a complex example. What we have here is wideband compression followed by boosts from band III and V, and another boost by band IV in “Sticky” mode (which means that band IV ignores W-Band dynamics).

Hint: And if this doesn’t suffice, you’re still free to activate any band’s own dynamics processor! ☺

MAIN DISPLAY



The main display provides direct feedback and access to important audio parameters. Filter parameters can be directly manipulated via drag & drop and various mouse/key modifiers, and if needed, with the help of a real-time frequency analyzer. More details below.

Scales

The horizontal axis describes **FREQUENCY** in a logarithmic scale.
The vertical axes describe **GAIN** in Decibel scale, whereby:

- The left scale relates to the overall frequency magnitude and gain reduction produced by the current setting (yellow curve and area).
- The right scale (blue) is used for the audio analyzer and threshold curves (blue line and area).

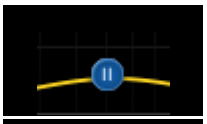
Curves

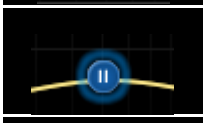
Depending on the current setting, up to four curves appear on the display:

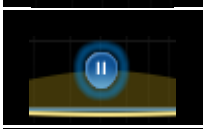
- The yellow curve represents the effective frequency magnitude response of the processor.
- The darker yellow area represents the gain reduction (or expansion) generated by the various dynamics processors.
- The blue line represents threshold over frequency (blue scale).
- The blue area in the background shows the analyzer's response (blue scale).

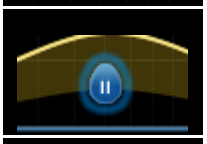
Band Handles

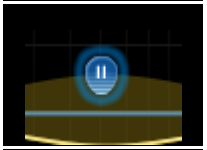
Most EQ parameters can be directly manipulated by dragging band-handles around or using their various modifiers. Here's a full overview of the various handle types and their meanings:


Static EQ band, not selected.

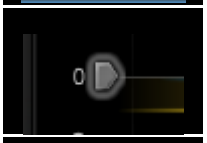

Static EQ band, selected.

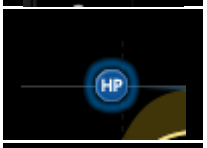

Compressive EQ band, linked to W-Band, selected


Selected expansive EQ band (linked to W-Band)

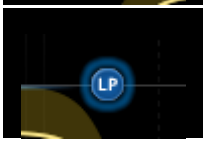

Compressive EQ band, **SPLIT** mode enabled, selected.

Expansive EQ band, **SPLIT** mode enabled, selected.


W-Band handle, selected.



Highpass band, selected.



Lowpass band, selected.

Enabling/disabling bands

- Double click on an empty area to automatically select and enable the nearest disabled band (and move it to the current mouse position).
- Double click a band handle to deactivate it (note that inactive bands are hidden).

Selecting bands

- Click on band handle to select a band. The SHIFT modifier allows selecting groups of bands.
- Over a blank area, click and drag to draw a selection rectangle. All bands contained within the selection rectangle become selected. The selection rectangle also supports the SHIFT modifier to select/deselect whole groups of bands.
- Click a blank area to select the W-BAND.
- If no band is selected, W-BAND becomes selected.

Controlling audio parameters with band handles

- Click and drag a handle to adjust **GAIN** and **FREQUENCY** of selected band(s). Note that certain handles are restricted to one axis: The W-BAND handle can only adjust **GAIN** (vertically) and the **HP/ LP** filter handles can only adjust **FREQUENCY** (horizontally).
- Move the mouse-wheel over a band to adjust its **Q.**
- Right click a handle to cycle through filter **SHAPES** (shelf, bell).
- Use ALT + click to reset GAIN of selected band(s) to zero dB.
- Use SHIFT + ALT + click to fully reset all parameters of selected band(s) to default.

Band Solo

Press CTRL + SHIFT (CMD + SHIFT on a mac) to activate the solo mode for the selected bands. This mode allows previewing the effect of single bands (or groups).

BAND SELECTION/ACTIVATION ROW

This section features the main band selection/activation buttons. The top button row indicates the selection state. Use SHIFT + click on the band selection buttons to select multiple bands. Note that only active bands can be selected.

The second row of "**ON**" buttons allows to enable/disable bands.

The button labeled "**ORDER BY FREQ**" becomes active as soon a band's **FREQUENCY** is higher than the previous band. Clicking the button re-orders all band settings by **FREQUENCY**.

EL BYPASS (equal loudness bypass) activates a click free, latency and loudness compensated bypass.

GR DELTA (gain reduction difference) allows to "solo" the changes all dynamics processors are currently providing. This control is greyed out when no dynamics processor is running.

EQ BAND DETAILS

This view appears as soon as one or more bands are selected, and gives control over every parameter relevant to the selected band(s). If more than one band is selected, any changes made with the help of the details view will affect the entire group in an absolute manner. That is, turning the **GAIN** knob with a multiple selection with set the same **GAIN** value for all selected bands.

Note: The display's band handles work differently! They affect groups in a relative manner (where the change is same for all bands).

Filter Shape
Low-shelf, Bell and High-shelf.

Q
Steepness of the selected filter shape. Low values produce large and smooth transitions, while higher values result in much narrower/steeper responses.

Frequency
The center/corner frequency of the selected band(s). Freely adjustable between 10 Hz and 40 kHz.
Hint: Use the convenient "ORDER BY FREQ" function (p.14) to reorder the bands in the familiar ascending sequence.

Gain
Controls filter gain of the selected filter shape over +/- 12 dB. Gain is applied after (dynamics) detection. A yellow circular meter indicates the amount of gain reduction applied to the current band.

Threshold (button)
Enables dynamics processing for selected band(s).
Hint: ALT + click activates the STICKY mode. This forces the band to ignore W-Band compression.

Threshold (knob)
Controls the onset of compression/expansion of selected band(s). A blue circular meter indicates the level of the sidechain signal.

Split (button)
If pressed, the select band will use its own fully independent dynamics processor, which in turn listens to the band's own bandwidth; it includes independent control over RATIO and timing.

If **SPLIT** mode is disabled, the selected band will follow the W-Band dynamics detector, whereby **RATIO**, **ATTACK** and **RELEASE** fall back to the W-Band dynamics processor's settings. W-Band controls have grey knobs and/or grey rectangles in their text-editors.

Ratio
Controls dynamics ratio of selected band(s).
Note: If SPLIT mode is disabled, RATIO uses the W-Band RATIO control (indicated by a grey knob/rectangle).

Attack
Controls the reaction speed of the selected band(s) dynamics processor.
Note: If SPLIT mode is disabled, ATTACK uses the W-Band ATTACK control (indicated by a grey rectangle).

Release
Controls the recovery speed of the selected band(s) dynamics processor.
Note: If SPLIT mode is disabled, RELEASE uses the W-Band RELEASE control (indicated by a grey rectangle).

W-BAND DETAILS

The W-Band detail view appears when no other band is selected. It gives access to all W-Band parameters and also includes a small overview of the signal path.

Gain
Controls gain of the W-Band path over +/- 12 dB. Note that the W-Band signal varies depending on filter settings; it does **not** represent overall gain (use the **OUT GAIN** control instead). A yellow circular meter indicates the amount of gain reduction applied to the W-Band path.

Threshold (button)
Activates dynamics processing for selected band(s).

Threshold (knob)
Controls the onset of compression/expansion of selected band(s). A blue circular meter indicates the level of the sidechain signal.

Ratio
Controls the dynamics ratio of selected band(s).

Attack
Controls the reaction speed of the W-Band dynamics processor.

Release
Controls the recovery speed of the W-Band dynamics processor.

INPUT/OUTPUT CONTROLS

HIGHPASS FILTER

The **HP** button activates a highpass filter.
Use the **FREQ** control to adjust the filter's corner frequency.
Filter steepness can be controlled in seven steps via the **SLOPE** drop-down.

Hint: All HP parameters can also be edited via the main display. FREQ can be adjusted by dragging the HP handle horizontally, a right mouse click over the handle cycles through all slopes.

LOWPASS FILTER

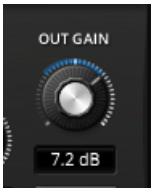
The **LP** button activates a lowpass filter.
Use the **FREQ** control to adjust the filter's corner frequency.
Filter steepness can be controlled in seven steps via the **SLOPE** drop-down.

Hint: All LP parameters can also be edited via the main display. FREQ can be adjusted by dragging the HP handle horizontally, a right mouse click over the handle cycles through all slopes.

DRY MIX

The **DRY MIX** control allows mixing the original with the processed output, whereby 0.0% means that no dry signal is added to the output, 50.0% indicates an equal mix of dry and wet signals, and 100% is equivalent to **BYPASS**.

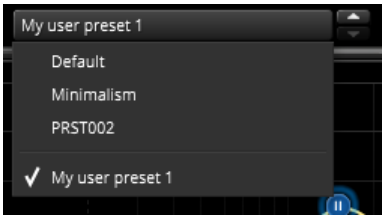
OUTPUT GAIN



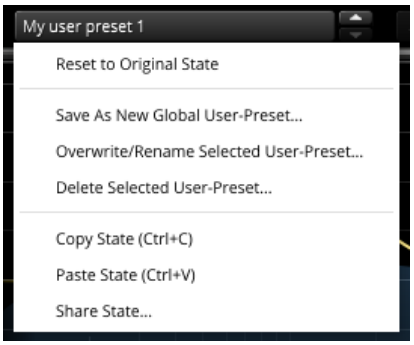
OUT GAIN controls the output level of the plugin.

TOOLBAR

PRESET MANAGEMENT



The preset drop-down list gives quick access to factory and user presets. Alternatively, up/down buttons allow cycling through them with a single click.



Advanced preset management options are available from the context menu (right-click):

Reset to Original State resets the currently active preset to its original state.

Save As New Global User-Preset opens a dialog used to create User Presets. Note that these presets persist across sessions and DAWs (presets are saved on your machine). The total amount of user presets is limited to 10, however.

Copy and Paste allow copying control states (i.e. “presets”) across plugin instances and plugin hosts. Additionally, **share state** opens a dialog with additional preset sharing options via e-mail or internet forums.
These three options can also be accessed from the standard context menu (right click a “blank” UI area).

UNDO/REDO

Use the undo/redo buttons to navigate to previous control states. Details about the change appear in a tool-tip. Note that certain controls are not tracked by the undo/redo history (e.g. "Bypass"), as that would not make much sense.

A/B CONTROL

A/B allows comparison of two alternative control settings.
A>B and B<A copy one state over the other.

PROCESS-TARGET

The audio input can be processed in Stereo, Mono, Left, Right, Sum and Diff mode.

- **Mono** forces (sums) any input to mono, independently of the plugin host's channel configuration.
- **Stereo** represents conventional LR processing.
- **Sum** and **Diff** represents either "Mid" or "Side" processing accordingly. Note that this processing is exclusive in the sense that only the selected target is processed, while the other is left untouched.
- Similarly, **Left** and **Right** allow the left or right channels to be processed exclusively.

Hint: Sum, Diff, Left and Right modes allow simultaneous and fully independent processing of each channel by simply adding multiple instance of NOVA in series and using either exclusive processing mode. The CPU load of two instances each processing Left/Right independently will not be much higher that the CPU load of a single instance operating in Stereo mode.

SIDECHAIN INPUT

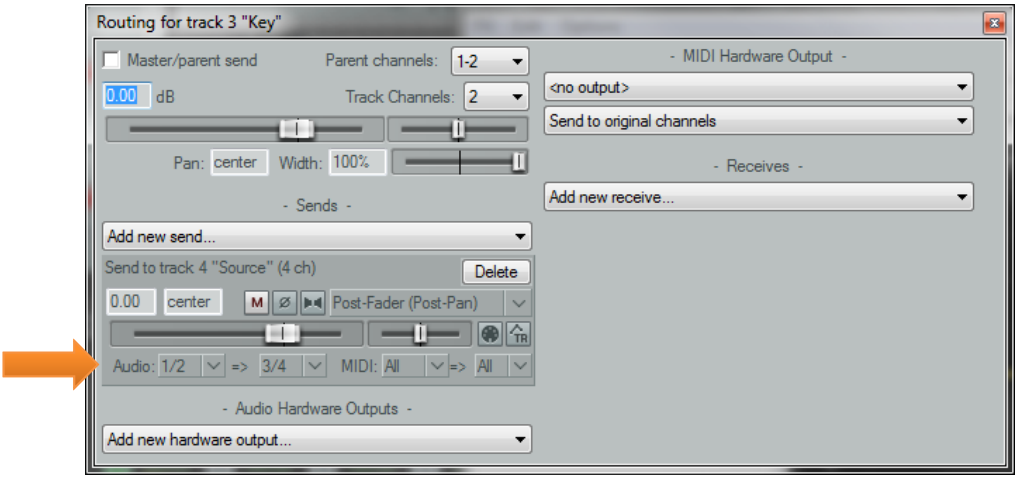
The sidechain-input dropdown allows using an external signal to drive NOVA's sidechain.

- INT SC: Internal sidechain input. NOVA uses the input signal to drive the dynamics processor.
- EXT SC: External sidechain input. NOVA uses an external signal to drive the dynamics processor.

Note that the sidechaining abilities vary greatly across plugin formats and plugin hosts.

VST 2 / Reaper

- In Reaper, send any "key" signal to the source track's channel 3 and 4.
- Select "EXT SC" in NOVA's toolbar.



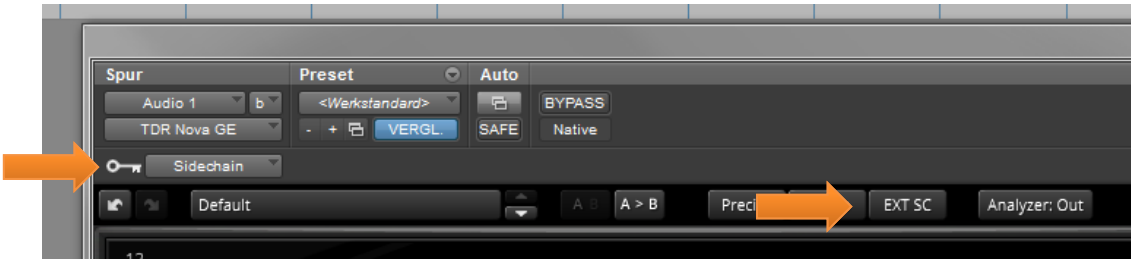
Note: In order to work, plugin host must support multi-input plugins. Sadly, only few s support multiple plugin inputs. Reaper is probably the most popular example.

AU / Logic

1. In Logic's plugin window, assign a bus to operate as a sidechain signal.
2. Select "EXT SC" in NOVA's toolbar.

AAX / Protools 10+

1. In Protool's plugin window, assign a bus to operate as a sidechain signal.
2. Select "EXT SC" in NOVA's toolbar.



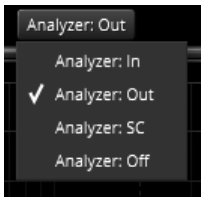
Note: AAX sidechains are always mono.

PROCESS-QUALITY

NOVA offers two different quality modes:

- Eco: Economic mode, with an internal bandwidth ~100kHz
- Precise: Default quality, with an internal bandwidth ~200kHz

ANALYZER INPUT



NOVA's analyzer can be connected to various sources, or disabled altogether.

- In: Analyzer follows the plugin's input.
- Out: Analyzer follows the output. This is probably the most useful setting.
- SC: Analyzer follows the sidechain signal. This is particularly useful when using an external sidechain signal.
- Off: Disables the analyzer.

HELP MODE

The dynamic help mode offers detailed information about the various elements of the user-interface. Click "?" to activate the online help and move the mouse-cursor over the control of interest. A small info bubble will appear. Another left- click closes the help mode.

SETTINGS

The settings button opens a dialog which gives control over additional user interface settings such as knob/slider behavior and latency information.

INFO/ABOUT PAGE

Shows information about the plug-in version, registration status and external links.

MOUSE CONTROL BEHAVIOR

All controls within the plugin feature acceleration. Fast movements of the mouse make large changes and slow, small movements allow for fine tuning of settings. Alternatively, it is possible to revert the knob behavior back to a linear mode. Open the settings dialog to access these options.

Press either Alt + click or double-click a control to reset to its default value.

INSTALLATION

First of all, make sure you download both the key file and the plugin binary. All files can be downloaded from your customer area.

Windows installation:

1. Run the provided installer (double-click).
2. Follow the instructions.

Mac OS installation:

1. Open the dmg archive (double-click).
2. Follow the instructions.

TECHNICAL SPECIFICATIONS

Available binaries:	32bit and 64bit VST/AU/AAX
Input / Output resolution:	32bit floating point
Internal resolution:	64bit floating point
Latency 44.1/48k:	187 samples
Latency 88.2/96k:	31 samples
Latency 176.4/192k:	0 samples
Supported sample-rates:	From 44.1kHz to 192kHz
Supported channel configuration:	Mono, Stereo, Left, Right, Sum, Difference

GET IN TOUCH!

We want to hear your feedback! You can easily reach us via one of the websites below.

Check out the Tokyo Dawn Labs website for feedback, news, updates and downloads:
http://www.tokyodawn.net/tokyo-dawn-labs/

You can also head directly to the plugin page:
http://www.tokyodawn.net/nova-ge/

Bug report page:
http://www.tokyodawn.net/fill-a-bug-report/

Tokyo Dawn Labs is closely affiliated with Tokyo Dawn Records, so be sure to check out their wonderful artists and music releases! ☺
http://www.tokyodawn.net

CREDITS

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Additional documentation by…

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